

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
8 December 2005 (08.12.2005)

PCT

(10) International Publication Number  
**WO 2005/116449 A1**

(51) International Patent Classification<sup>7</sup>:  
H02K 1/22, 1/27

F04B 39/02,

(74) Agents: KAWAMIYA, Osamu et al.; AOYAMA & PART-  
NERS, IMP Building, 3-7, Shiromi 1-chome, Chuo-ku, Os-  
aka-shi, Osaka 5400001 (JP).

(21) International Application Number:

PCT/JP2005/010199

(22) International Filing Date: 27 May 2005 (27.05.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

2004-159166 28 May 2004 (28.05.2004) JP  
2005-043714 21 February 2005 (21.02.2005) JP

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,  
MD, MG, MK, MN, MW, MX, NA, NG, NI, NO, NZ,  
OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL,  
SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC,  
VN, YU, ZA, ZM, ZW.

(71) Applicant (for all designated States except US): MAT-  
SUSHITA ELECTRIC INDUSTRIAL CO., LTD.  
[JP/JP]; 1006, Oaza Kadoma, Kadoma-shi, Osaka,  
5718501 (JP).

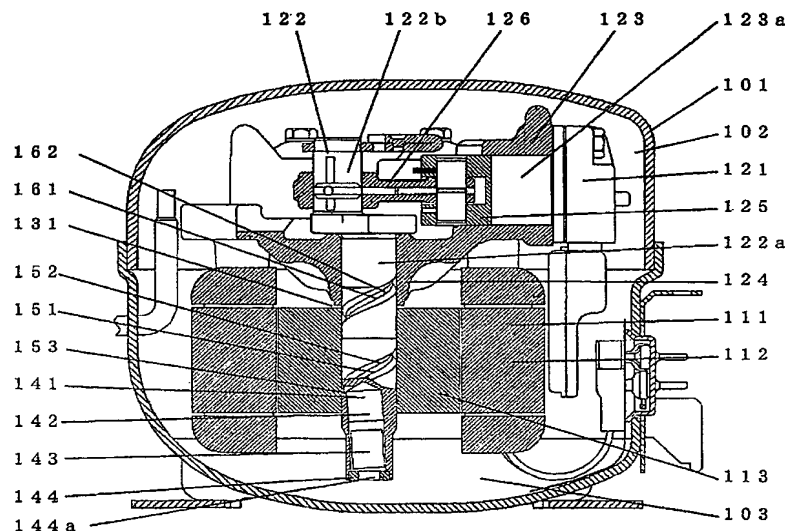
(72) Inventors; and

(75) Inventors/Applicants (for US only): KAKIUCHI,  
Takashi. AKASHI, Hironari. TSUBOI, Kosuke.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,  
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,  
GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: HERMETICALLY SEALED COMPRESSOR



(57) Abstract: A hermetically sealed compressor includes a sealed vessel filled with a coolant and a freezer oil, an electromotive element including a rotor and a stator and accommodated within the sealed vessel, and a compressing element accommodated within an upper region of the sealed vessel and adapted to be driven by the electromotive element. This compressing element is provided with a shaft, arranged so as to extend vertically and having the rotor mounted thereon, and a bearing for supporting the shaft. A first oil pump is provided in a lower portion of the shaft and opening into the freezer oil, a second oil pump is provided above the first oil pump and formed by a spiral groove, provided on an outer periphery of the shaft, and an inner peripheral wall surface of the rotor, and a third oil pump is provided above the second oil pump and formed by a spiral groove, provided on the outer periphery of the shaft, and an inner peripheral surface of the bearing.



**Published:**

— with international search report

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*